

such a petition has been inadvertently overlooked and is required. As provided below, charge Deposit Account **04-1105** for any required fee.

REMARKS

Claims 1 through 14 are pending in the subject application. Claims 1-5 and 7-14 stand rejected under 35 U.S.C. 103(a). Claim 6 has been allowed.

The Applicant appreciates the Examiner's thorough examination of the subject application and respectfully requests reconsideration of the subject application based on the following remarks.

35 U.S.C. § 103(a) REJECTIONS

The Examiner has rejected claims 1-5 and 7-14 under 35 USC 103(a) as being unpatentable over the prior art in view of U.S. Patent Number 6,396,089 to Lin, et al. ("Lin" or the "Lin Reference"). The Applicant respectfully traverses these rejections for reasons detailed below.

Claims 1-5, 8-11, 13, and 14

The Examiner asserts that, the admitted prior art discloses all of the features of the invention as claimed except for a planar/flat top surface, which the Examiner maintains is taught by the Lin Reference. The Applicant respectfully disagrees.

According to the present invention, planarization, or flattening, of the passivation film 5 of the present invention is for the purpose of converging incident light onto a light reception section 2. Prior art solid-state imaging devices included stepped passivation films 15 that made it difficult to converge incident light on the

light reception section 12 because stepped surfaces associated with the prior art reflected and refracted light. See, e.g., Application page 8, line 7 to page 9, line 9. In short, by providing a passivation section "having a substantially flat top surface and overlying the light shielding section, the light reception section, and the aperture," stepped areas that otherwise might cause reflected and refracted light are minimized. See, e.g., Id., page 15, lines 14-22.

Lin, in contrast, discloses an image sensor having bonding pads 302 that are covered by a non-planar oxide passivation layer 304, whose purpose, like that of the passivation layer of the invention as claimed, is "to prevent the underlying device from being mechanically damages and penetrated by moisture and alkaloid ions." See, Lin, col. 3, lines 23-28 Emphasis added). The Examiner incorrectly suggests that the "passivation layer" of the Lin reference includes reference numerals 304, 306, 308, and 310. Only the oxide layer 304 is part of the Lin passivation layer.

The Lin passivation layer 304 clearly does not have a substantially flat top surface. Indeed, as seen in Figure 3, the oxide layer 304 is not planar, which, for lack of planarity, causes reflected and refracted light.

The Lin device further includes a covering by a spin-on-glass (SOG) layer 306, which, in combination with the passivation layer 304, enhances blue light transmittance as compared to plain films 106 of the prior art. See, e.g., Id., Abstract; col. 3, lines 23-51. The SOG layer 306 is not part of the passivation layer, which is to say that, its purpose is not to prevent the underlying device from being mechanically damages and penetrated by moisture and alkaloid ions. Hence, not only is the Lin passivation layer 304 non-planar, but, its purpose (enhanced transmittance) has nothing to do with minimizing reflected or refracted light caused by stepped portions as is taught by the present invention.

Furthermore, the Lin passivation layer also does not overlie a light shielding section, a light reception section, and/or an aperture as recited in the invention as claimed.

Therefore, the Applicant respectfully asserts that there is nothing in the prior art that teaches, mentions, suggests or provides a motivation to planarize the stepped passivation layers 5 of solid state imaging devices to enhance light convergence. Moreover, there is nothing in the prior art that teaches, mentions, suggests providing a passivation layer that overlies a light shielding section, a light reception section, and/or an aperture.

Accordingly, the admitted prior art does not teach, mention or suggest the invention as claimed. Furthermore, the Lin reference cannot make up for the deficiencies of the admitted prior art. Thus, it is respectfully submitted that, claims 1-5, 8-11, 13, and 14 are not made obvious by the admitted prior art in view of Lin and, further, satisfy the requirements of 35 U.S.C. 100, et seq., especially § 103(a). Accordingly, claims 1-5, 8-11, 13, and 14 are allowable. Moreover, it is respectfully submitted that the subject application is in condition for allowance. Early and favorable action is requested.

Claims 7 and 12

With respect to claims 7 and 12, the Examiner maintains that it would have been obvious to provide superior insulating properties. The Applicant respectfully disagrees.

First, the Lin reference does not once mention insulation as a desirable property, nor is insulation an inherent property of all passivation layers. Lin merely addresses enhancing blue light transmittance and provides no motivation to improve insulation or the light convergence as taught by the present invention. Thus, there is nothing in the prior art that teaches, mentions, suggests or provides a motivation to

planarize the stepped passivation layers 5 of solid state imaging devices to enhance light convergence or to include an insulation layer.

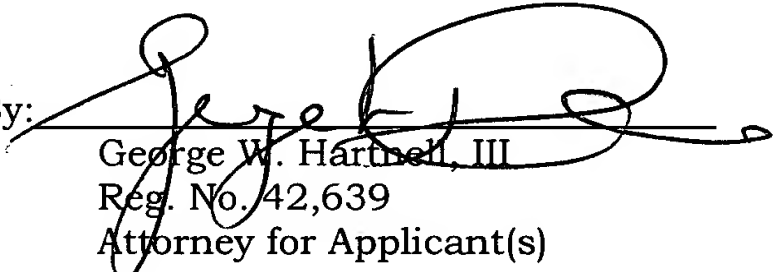
Accordingly, the admitted prior art does not teach, mention or suggest the invention as claimed. Furthermore, the Lin reference cannot make up for the deficiencies of the admitted prior art. Thus, it is respectfully submitted that, claims 7 and 12 are not made obvious by the admitted prior art in view of Lin and, further, satisfy the requirements of 35 U.S.C. 100, et seq., especially § 103(a). Accordingly, claims 7 and 12 are allowable. Moreover, it is respectfully submitted that the subject application is in condition for allowance. Early and favorable action is requested.

The Applicant believes that no additional fee is required for consideration of the within Response. However, if for any reason the fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge Deposit Account No. **04-1105**.

Respectfully submitted,

Date: July 7, 2003

By:


George W. Hartnell, III
Reg. No. 42,639
Attorney for Applicant(s)

EDWARDS & ANGELL, LLP
P.O. Box 9169
Boston, MA 02209
(617) 517-5523
Customer No. 21874
340608